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# COLMAN'S RURAL WORLD

DEVOTED TO AGRICULTURE HORTICULTURE HORSES CATTLE SHEEP SWINE ETC.

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## COLMAN'S RURAL WORLD.

**NORMAN J. COLMAN,**  
H. A. BENNETT, EDITORS.  
Published every Wednesday, in Chemical building, corner of Eighth and Olive streets, St. Louis, Mo., at one dollar per year. Eastern office, Chalmers D. Colman, 220 Temple Court, New York City. Advertisers will find the RURAL WORLD the best advertising medium of its class in the United States. Address all letters to COLMAN'S RURAL WORLD, Chemical Building, St. Louis, Mo.

Subscribers must bear in mind that the subscription price of the RURAL WORLD is one dollar a year, and that we do not receive single subscriptions for a less sum, but in our constant effort to enlarge our circulation, we do allow old subscribers to take actually NEW subscribers at the fifty-cent rate, adding a new name with their own for one dollar, and other new names at fifty cents each, but in no case do we accept two OLD subscribers for one dollar. We are willing to make a loss on a new subscriber the first year, believing he will find the RURAL WORLD indispensable ever after. We also send the RURAL WORLD in conjunction with either the twice-a-week St. Louis "Republic" or the twice-a-week "Globe-Democrat" for one dollar and fifty cents a year, and new subscribers may be added at the fifty-cent rate. Published at this remarkably low price—less than actual cost—all subscribers must see the necessity of our dropping from our subscription list every name as soon as the year paid for expires. Thus, if, on the printed slip of each paper you see John Jones May 02, it indicates that the name will drop from the list at the end of May, and if he wishes to continue to receive it, he must renew his subscription. If he would do it a week or two in advance, it would save us the trouble of taking his name off the list and again putting it in type, when he renewed, which frequently causes mistakes.

### AGRICULTURE'S FUTURE.

Never in the history of man was the outlook for the American agriculturist so encouraging as it is to-day. Looking backward for some of the causes of this condition and a few of the facts justifying the above conclusion, we note the following:

FIRST—Increasing knowledge of the science of agriculture.

SECOND—Widening markets and narrowing production.

THIRD—Greater facilities for operation.

FOURTH—Better opportunities for enjoying life.

**I. INCREASED KNOWLEDGE.**—The world moves on and so rapidly in this field of science that it does not always realize the stages whereby we advance. Among the notable influences operating in the rural mind, that exerted by the increased efficiency of the agricultural department may readily be reckoned first. The wide scope and broad-minded policy of this department render it an educational power far reaching in extent and practical in results.

The agricultural colleges, with practical demonstration of subjects taught, are entering an epoch of extending beyond the limits of the alumni circle.

The experiment stations, with their corps of specialists, following lines of original research and investigations of new and established methods, fulfill the object of their mission if they but teach the American farmer that "science" is truth. The common distrust of "scientific" farming is disappearing in the light of the new meaning of the word and its work. After all, science is but exact knowledge systematized. It is the province of the three institutions mentioned above to furnish exact and systematized knowledge covering the whole field of husbandry, and it is for those who are to apply this "science" to the varying conditions of agricultural life.

Farmers' institutes—a sort of university extension—the many associations and societies of allied interests, the state fairs and stock shows, world's expositions—all have their special value in disseminating knowledge of the possibilities of improved methods, and we say, in all modesty, that the agricultural press has its share in the renaissance of the rustic.

Last week's head, but not least, and we earnestly hope to see it in the near future, is the primary work already begun in rural schools along lines of practical agricultural training. This matter deserves special attention by educators. Elementary lessons in vegetable biology, botany and chemistry, showing respectively the habits of growth, the formation of soil and the plant food elements in the soil, would constitute an educational force, the results of which are incalculable. The real kindergarten of the future will be the children's gardens made under the wise direction of the country school master, by the farefooted country boys and girls.

**2. SUPPLY AND DEMAND.**—One of the most encouraging facts to the husband-

man of to-day is the increasing demand for his products and the lessened competition by a relatively lower aggregate of production. That this is true, no one who will study the civic and economic conditions of our country to-day can deny.

The whole population is growing, the public domain is practically taken up and farms are augmenting in value. The city population is multiplying at a faster rate than that of the rural districts. As industrial conditions improve with the world's progress, urban consumption increases per capita. The above statements apply in a greater or less degree to foreign countries, and all demonstrate the fact that the world must be fed, and it is up to the American farmer to take the contract. There will be no ruinous competition to cut profits, an agricultural trust is an impossibility, and, in short, the farmer's independence of price will be higher on nearly all farm products, and the man with the hoe is going to have the chance of his life.

**3. THE MECHANICAL AGE.**—Among the increased facilities for operation may be mentioned good roads, better transportation facilities and improved machinery.

The advantage of good country roads can not be overestimated, and under the impetus of automobile and bicycle travel this question will assume an importance in the public eye that will bear fruit of special value to the farmer. Travel is not a matter of miles, but condition. A team may travel ten miles on a smooth, hard road with greater ease and in less time than five miles through mud or over frozen ruts. Allied to this subject of good roads is the general matter of transportation. This comes near being the biggest proposition on earth; yet, analyzed, what is it? Merely the moving of an article from one place to another. As railroad facilities increase, supplemented by river, lake and ocean traffic, rates will become more uniform and probably lower under proper legislative safeguards. The farmer should not forget what he owes to the railroads. They have carried him to his farm and then carried his farm back to the markets of the world. When there were no railroads the farmer used his corn as fuel and lived on hog and hominy. The steam engine now with its around the curve and brings the farmer luxuries as well as necessities and hauls his corn and cattle back to the city; moreover, his farm is quadrupled in value.

Modern machinery, eliminating the drudgery and increasing the capacity of the human unit working, has had an untold influence on the history of agriculture. There is no reason to doubt the same rate of progress in the improvement of farm implements for the next ten years, that has been so conspicuous during the past decade.

**4. THE JOY OF LIVING.**—It is scarcely necessary to dilate upon the joys of rural life. The poets have attended to that. However, some of the advantages which the farmer of the future can enjoy, and which were unknown to his grandfather, may be detailed.

The farmer of the future will be brought daily to his door and he gets his farm paper, his letters and his weather bulletin without leaving his farm. He goes to visit his city cousins or drive over the countryside in elegant and modern carriages. His daughter, with a higher education, makes sweet music on a grand piano, and there are telephones in thousands of country homes to-day. Extensive ultraurban systems of electric railways, free library distribution and all of the recent additions to the country home, enumerated above will relieve the farm life of that deadly isolation which has been one of its greatest drawbacks. The future of agriculture means not alone greater production at relatively smaller cost, but it means more time for leisure to improve the mind and cultivate a few of the graces. It means the enjoyment of the blessings of an independent life in a Paradise of pure air, instead of a smoke pau.

It means the fragrance of flowers instead of the stench of alleys and sewers. It means the songs of birds and the lowing of kine instead of the deafening roar of our commercial marts, and it means a healthy environment for the farmer's children, who will continue not only to feed and clothe the world, but to send out the best vigor of their blood into every corner of American energy to climb the heights of the learned professions, to master the problems of national life, to conquer the mysteries of the arts and sciences, and to win the laurels of all great achievements.

As an additional occasion for a higher enjoyment of existence may be mentioned the increasing respect with which farmers regard their calling and themselves and the consequent regard with which the urban world views this added dignity. There is no surer way to the world's consideration than to avoid envy, trucking and emulation, and cultivate independence of thought and dignified self-respect. The world takes a man at his own estimate, especially if that estimate is low. If too high, the world disdains him, but if too low they let it go at that. The American farmer has begun to appreciate his true value, and while he may not insist strenuously on

the recognition, he is fast becoming the national type, sturdy, industrious, level-headed and honest. The American farmer has his future before him.

### OLEOMARGARINE TAX RULING.

Commissioner Yerkes of the internal revenue bureau has set the contested question as to whether butter or any other ingredient artificially colored may be used in the manufacture of oleomargarine without increasing the tax from one quarter of a cent to 10 cents a pound by issuing a regulation which holds in effect that no artificial coloring matter whatever can be used in any way in the manufacture of oleomargarine without increasing the tax as stated. The ruling is as follows:

"If in the production of oleomargarine the mixtures or compounds set out in the law of 1886 are used, and these compounds are all free from artificial coloration, and no artificial coloration is produced by the addition of coloring matter as an independent and separate ingredient, a tax of one-fourth of 1 cent per pound only will be collected, although the finished product may look like butter of some shade of yellow. For example, if butter that has been artificially colored is used as a component part of the finished product oleomargarine (and that finished product looks like butter of any shade of yellow), as the oleomargarine is not free from artificial coloration, and the tax of 10 cents per pound will be assessed and collected. But if butter absolutely free from artificial coloration, or cottonseed oil free from artificial coloration, or any other of the mixtures or compounds legally used in the manufacture of the finished product, oleomargarine has naturally a shade of yellow in no way procured by artificial coloration, and through the use of one or more of these unartificially colored legal component parts of oleomargarine, the finished product should look like butter or any shade of yellow, this product will be subject to a tax of one-fourth of 1 cent per pound only, as it is absolutely free from artificial coloration that has caused it to look like butter of any shade of yellow."

The significance of this decision is that the "oleomargarine" is still at their old tactics—trying to beat the law. They have no notion of the new law, and they are to support it, and whether they know it or not the name of that stone is "Cheerfulness." Now the seeds of hope, cultivate the habit of optimism (which means the best) and reap the harvest of happiness which comes from the consciousness of duty well performed.

### GOVERNMENT IRRIGATION.

The irrigation bill which the President signed on the 18th inst. applies to Arizona, California, Colorado, Idaho, Kansas, Montana, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington and Wyoming. The Secretary of the Interior is authorized to examine, survey, construct, maintain and operate irrigation works in these states, and a fund will be created out of the proceeds of land sales in the region. While the direct benefit of this work will redound to the arid region, the establishment of irrigation works in any section is not entirely a matter of local importance.

In the first place, the work proposed by the bill just passed is but the entering wedge—the beginning of what future congresses should push as rapidly as experience and necessity justify. It is a question affecting the whole country, and a pleasing proof of this is shown by the arguments of Mr. Tivoli of Massachusetts in favor of the bill. Mr. Tivoli states that the New England market is at home and keeps pace with the growth in manufacturing, and that the building up of the arid region will enlarge the demand for New England manufactured articles as well as provide new lands for the increase in population and the rising tide of foreign immigration.

The question of irrigation has become so important that economic results can only be attained by the concentrated union of immense capital and wisely directed energy. The National Government must only be able to provide this. It would seem reasonable to assume that the process of making an imitation of butter from crude fats and oils were entirely an "artificial" one, and as such would be subject to the 10-cent tax as soon as the product encroached upon the color line.

If the United States Supreme Court shall ultimately decide that the word "artificial" applies only to the addition of a "drug" color, and not to the coloring by art with some substance not a drug, such as butter, cottonseed oil and the like, the cause of Pure Food will not be benefited. Citizens who want pure food and who want to get what they ask and pay for, must insist that the law be enforced. They must remember that the specific legislation against oleo is but the beginning. The whole array of frauds and substitutes must be wiped out.

It is to be a fight to the finish. The friends of pure butter may not rest on their laurels. They must be ready to meet any further political or economic attack and the time is coming when the shackles of trust domination and brazen defiance of law will be broken. Truth and justice will prevail, but those who love justice and truth must fight for them.

Oleomargarine interests represent millions of concentrated capital and thorough organization, and this sort of an enemy should not be despised by a vastly larger force, but with no cohesion. The unit is the basis of influence in any organized effort. Let every man who wants to buy or sell pure butter add his personal influence in this cause, and the result will be as the mighty flow of a tidal wave, irresistible and overwhelming.

### OPTIMISM AS A HABIT.

There is a class of farmers too much inclined to look on the dark side. This fatal habit is engendered by apparent or temporary failure.

Pessimism may be a useful philosophy when active. There is a noble discontent that is the mainspring of progress—the dissatisfaction of conditions which may be improved. But there are many good folks who seem so anxious to be miserable that they will go out and pledge their happiness as security on which to borrow trouble. They need an arrest of thought.

No success can come out of discouragement. When you lose your courage you throw away the weapons God gave you with which to fight the battle of life.

To this class there is no need to preach our President's excellent doctrine of the Strenuous Life, for whatever be the faults of the American Husbandman, indolence is not one of them.

I wish to preach the doctrine of Cheerfulness, of encouragement and hope, of self-control, of determination. Success is largely a matter of will power. The man who hangs on with a smile of grim determination to "get there" despite temporary setbacks and apparent failure, is the man who wins. To give up is to fall by the wayside.

Keeping cheerfully at it is easy. If the life and mistakes of life are regarded as but the incidents and lessons of a business career. Keep a stiff upper lip and assume an air of success, and you will get the world's respect, while the man who complains and wastes his life in the mud of pessimism, and who is better than pity and contempt.

To believe in one's self—there's the thing and also there's the rub. Many men have an overweening assurance. They need no sermon on the text "I will," but to those who have not lived up to their expectations, who have not done as well as they know, who are discouraged and who are looking for a hand to hold, I have two good words: one of them is a pleasure to milk, the other requires considerable effort. She is six years old and gives a good pal. Another question: How may I propagate plants from my strawberry patch? This, of course, is a question of the strawberry patch, which I leave to your paper.

### VERNON CO. (MO.) CORRESPONDENCE.

Editor RURAL WORLD: Wheat harvest is in full blast. There is about 80 per cent more if it in our part of the country this year than for several years. The quality is good so far and the quantity estimated at 10 to 12 bushels per acre.

Corn is growing well, in spite of the weeds. The cultivators are being kept warm from early morn till dewy eve.

Oats promise a good crop.

The rains two weeks ago washed the soil off the wheat and added several inches to the length of the stalks.

We have been trying for two weeks to make clover hay, and have succeeded after a fashion in getting about twelve tons in two ricks ten feet wide and twenty-five long covered with prairie hay. We tried all kinds of ways for curing it while the sun did not shine, and have decided that the best plan is to cut it as soon as the dew is off or after 3 p. m., rake into windrows as soon as wilted or dried enough to rattle. Let it cure in the windrows if safe, then baled and stacked. But if the weather is showery, put it in small cocks of about 10 pounds each, when dry dressing them up neatly so that as little as possible will be on the ground and as high as they will safely stand the wind. A good hand at the business ought to build a haystack so that it will turn rain almost as well as a shingle roof.

### VERNON CO., MO. C. A. BIRD.

### SHREDDING AND BALING CORN FODDER.

Editor RURAL WORLD: When I need information about farm matters I know of no better source than your paper. You have correspondents on every branch of agriculture, and on nearly every topic connected with each branch, they are experienced and they give me the information I seek. I shall be short of a forage supply for my stock the coming winter. I have a large field of corn about three miles from my stables and shall need the corn fodder to help carry the stock through the winter. I shall cut and bind my corn with a corn harvester and binder and then put the same in shocks, of course trying to cut the corn at the proper time to get the most nutriment from the stalks. This is all settled.

Now comes the question as to how to handle the corn after in shock. The old plan is to hire men to husk it, set up again in shock and haul it to the stack and feed it as needed. If the shocks were near the stock this method is not so bad. Indeed, it is the plan I have used for many years very satisfactorily. But I have been thinking of another method, and the answer is to hire a husker and shredder and husk and shred the corn right where raised, and then bale the shredded fodder and haul the bales to my barns, to be fed as needed. I have a baler for baling hay, and am told the shredded fodder can be baled like hay or straw. Has any one had experience in baling shredded fodder, and is it very difficult to handle to get it into the bales? Those having experience in baling it will confer a great favor by giving it.

But there is another difficulty. There is no barn or stable to hold the fodder after being shredded. One can take chances of losing some by the rain, but how about the wind? Is there not a good prospect of the shredded fodder being

scattered over many acres by a strong wind if it should come, and which would be the cheapest way to protect it? Probably tarpaulins would do it. Undoubtedly the fodder could be hauled much cheaper and more expeditiously in bales than from the shocks on wagons. The readers will understand just how I am situated, and if any of them will tell me how they would handle the corn, under similar circumstances, they will confer a great favor upon a

### YOUNG FARMER.

### LIVE STOCK PRICES BREAK ALL RECORDS.

The highest price paid for cattle since 1882 was realized at the National Stock Yards in St. Louis on the 20th inst., when top native steers brought \$8.15. The best previous price was \$8.10, paid in Chicago the day before. A new record was also made by paying \$7.35 for hogs. These high prices are not due to any sudden spurt of the market, but are a part of the general advance which commenced about a year ago and will probably continue. The passing of the ranges and the feeding of beef cattle on farms and ranches make a pleasant picture for the contemplation of the small farmer. The beef of the future will be from stall-fed cattle raised and fattened in small bunches by the general farmer, who will not sell so much of the fertility of his soil as he has in the past by shipping grain to market. City population increased 40 per cent from 1890 to 1900, while the cattle supply grew but 10 per cent during the same period. There is a whole volume for thought in this brief statement.

### AGRICULTURAL EXHIBIT AT THE STATE FAIR.

Editor RURAL WORLD: All classes of farm crops have made a better growth this season than perhaps ever before in the history of the State. This is partly due to the rest the land had last year, in part to the exceptionally favorable season we have had so far, and in part to the excellent care and attention given to the crops by the farmers.

Our people have never had such an opportunity to make a superb agricultural exhibit at the State Fair. Splendid specimens of wheat, corn, rye, barley, timothy, blue grass, orchard grass, alfalfa, rape, cow peas, soy beans, potatoes, garden vegetables, etc., were never so abundant and so easy to collect in all parts of the State. Every one interested in the good reputation of Missouri should take advantage of this opportunity and begin work immediately on the largest possible collection of farm crops for exhibition at the State Fair, to be held at Sedalia, Aug. 18 to 23, with the understanding that the best specimens may be preserved for exhibit at the World's Fair in 1904 if the exhibitor so desires.

From every point of view it is important that the very best that the State affords should be on exhibition at the State Fair. Visitors from at home and abroad will expect this much, and the reputation of the State is at stake. This enterprise should appeal to all of our people and arouse in the fullest degree their State pride and patriotism, and every farmer should be ready and willing to contribute his part toward its success. Missouri's farms and her farmers will be on trial there, and no man who has or can procure without undue extension or expense a superior specimen of grass, wheat, rye, oats, corn, forage plant or other product, should fail to send it to the State Fair for exhibition. The management of the fair has provided among the first permanent buildings a splendid Agricultural Hall, in which the exhibitors will be properly displayed without cost to the grower. The railroads will transport such exhibits to the fair and return them free of cost. The fair offers liberal premiums as a part remuneration for the trouble to the exhibitor of preparing his material.

Furthermore, our people must get into the habit of preparing exhibits illustrating our resources, productions and achievements, for in 1904 the great Louisiana Purchase Exposition will be held in St. Louis, and it will be expected that we far surpass, in the magnitude and splendor of our exhibits, all of the other States and all other nations of the world. We cannot enter too early nor too seriously upon the great task which we have set before us. The exhibit at the State Fair will help us in many ways to success in the larger enterprises, and all meritorious material sent to the State Fair will be easily held for use at the World's Fair later. The Agricultural College will gladly take care of any such material until required for exhibit in 1904.

### AMONG OTHER PREMIUMS, THE STATE FAIR OFFERS \$50 FOR THE BEST EXHIBIT FROM ANY ONE COUNTY, EITHER MADE IN THE NAME OF THE COUNTY, A LOCAL SOCIETY OR AN INDIVIDUAL. EVERY COUNTY IN THE STATE SHOULD BE REPRESENTED IN THIS CONTEST.

For a full premium list address J. R. Rippey, Secretary, Sedalia, Mo.; and for any suggestions in regard to the preparation of the exhibit address the superintendent of the exhibit, H. J. WATERS, Superintendent of Agriculture, Columbia, Mo.

### A SALE OF THIRTY-ONE CARS OF "BRONCHOS," OR RANGE HORSES, WAS HELD AT THE NATIONAL STOCK YARDS, EAST ST. LOUIS, ON THE 17TH INST. THE QUALITY TOOK A WIDE RANGE, AS DID ALSO THE PRICE REALIZED FOR THEM. THE BEST CHUNKS BROUGHT \$8.45, WHILE YEARLINGS SOLD AT FROM \$9 TO \$17.

### EDITOR RURAL WORLD: EARLY THIS SPRING I SUBSCRIBED TO THE RURAL WORLD, AND I HAVE READ IT WITH MUCH INTEREST AND ATTENTION SINCE ITS FIRST APPEARANCE IN OUR HOME. IT IS AN EXCEP-

### NEWS AND COMMENT.

The British tax on maize is to be reduced by one-half.

Crops and fruit were badly damaged by hail and floods near Hot Springs, Ark., on the 20th inst.

Owing to the scarcity of tie timber, the Illinois Central will set out 30,000 catalpa trees on eighty acres near Duquoin, Ill.

Mr. Milton Underwood of Cornell University has been appointed assistant in agriculture at the Columbia (Mo.) experiment station.

The usual mad rush for homestead and mineral claims was made when the Fort Hall, Idaho, reservation was opened on the 17th inst. The lot drawing plan is better.

A dispatch from Odessa says that reports received there from all the black soil grain-producing regions of Southern Russia indicate that an abundant harvest is assured.

Kansas is suffering from too much rain, at a time when they do not especially need it, while the drought still continues in eastern Missouri and large portions of Texas.

Hester's statement of the world's visible supply of cotton, made up from special cable and telegraph advices, shows the total visible to be 2,311,949 bales, of which 1,567,949 was American cotton.

The cost of producing wheat in Kansas, according to the statements of 120 representative Kansas winter wheat growers, representing fifty-six different counties, is \$2.31 per acre of twenty bushels.

The condition of the Texas cotton crop is critical; good rains will make a big crop, but a continuation of the drought will cut it short. Acreage slightly less than last year; some damage by cut worms, lice and grasshoppers has been reported.

There is some talk but little prospect of the formation of a labor union among harvest hands and farm laborers. The same difficulty would be experienced as in the attempted organization of farmers—Isolation of members and lack of solidarity.

The distribution of harvest hands has been as irregular as the unequal downfall of rain. Saline, Kansas, reports the flocking to that point of hundreds of men who are unable to get work. In other portions of the state the cry has gone out for more help.

The weather this month has been almost unprecedentedly cold in France and Germany, so much so that farmers in those countries are much alarmed at the prospect, that this country may be called upon to supply crop deficiencies. Everything, just now, seems to be working to the advantage of the American farmer, and every other branch of industry will share in his prosperity.

An attaché of the Census Bureau complains that the Indians to whom allotments of land have been made are not good farmers. He says the system allowing the Indians to lease their lands is largely responsible for their lack of industry in agriculture. We expect to see a change after Mr. Chubbuck has given Mr. Lo some practical lessons in common sense and up-to-date farming.

There is every probability that the bill granting statehood to Oklahoma, New Mexico and Arizona will be favorably considered by the Senate before adjournment. Senator Quay is very anxious to secure consideration of the bill, and has given notice that he will move for the discharge of the committee on territories from further dealing with the measure and ask for its consideration by the Senate.

The Census Bureau has issued a report on the manufacture of starch in the United States, showing that the capital invested in that industry is \$11,671,567. The value of products is returned at \$2,282,884. The capital mentioned is invested in 124 establishments, and has increased in fifty years from \$662,675 invested in 146 establishments. The total quantity of starch manufactured in 1900 was 27,863,129 pounds, of which 247,931,744 pounds were made from Indian corn and the rest from other materials. Readers will notice the trend of the age by the increased capitalization and the smaller number of factories.

Tobacco growing in France is monopolized by the government and produces an average net revenue to the state of \$55,000,000. Tobaccoists buy all their supply from tobacco depots, where they pay cash. The government decides upon the number of tobacco shops in each town or district, and these shops are so situated that they cannot enter into competition with each other. If our tobacco monopolists do not behave themselves, the state may have to take them over and deal with the trade in this fashion. That, in the opinion of many, will be the ultimate fate of the combines, trusts and rings. And there is much to be said for the view that, whatever the merits of private enterprise, so long as open competition is possible, monopolies which crush competition ought to come under public control.







# Horticulture

## HORTICULTURAL TALK.

**BLACKBERRY AND DEWBERRY.**—P. B. G. Lawrence, Blackberry, Tenn.—I wish to grow plants from blackberry and dewberry and also Raspberry blackberry. How may I propagate them? If by layering, how and when should the work be done?—Dewberries are usually propagated from tips, like blackberry raspberries. September is usually the time to bury the tips. In doing this work it is best to set the tip straight down and not to bend it to the side, as in setting plants, instead of laying the tip on the ground and drawing a little earth over it, as practiced by some.

See that the soil is loose and fine. As soon as dormant they should be found well rooted and be ready to dig and plant out. They may also be grown from root cuttings. The best blackberry plants are grown from root cuttings. This is done by cutting the root into pieces from 3 to 4 inches long, according to the thickness; the larger roots being cut into shorter pieces. These are then prepared by cutting the plant in two, and planting horizontally in furrows made with a hoe about one inch deep. Cover with 1½ inches of earth, and when weeds start take off ½-inch with a good garden rake. Blackberry plants may be taken up and planted out either when dormant or in the young suckers of the same season's growth may be used. In the latter case it is necessary that the weather be favorable (moist) for best results.

**PEAR BLIGHT.**—Some of the orchards in this vicinity again have the appearance of being having suffered through them. Kiefer no less affected than Bartlett, and it is well known that Bartlett is one of the worst to blight. Trees that are badly blighted I would cut back severely, taking off not only all the affected limbs considerably below where blighted, but other limbs, giving the tree at the same time a desirable shape. This work should be done now or as soon as trees show that they are about to be taken by the disease.

As stated in a previous issue, pruning in summer checks the growth of a tree, which is the best preventive we know of. Some years ago at my home an orchard of Bartlett was badly affected. Most limbs on all trees showed more or less blight. As an experiment a few of the worst ones were cut back short, the whole top of the trees being removed. New growth started soon after and has taken on a shape and healthy appearance. These trees have since made a slow but steady growth and have shown no blight. Nearly all the other trees in the orchard were lost.

**ANTS AMONG STRAWBERRIES.**—Are ants working among strawberries injurious? If so, give remedy, writes a reader of the RURAL WORLD. Will say that a good many colonies of ants are to be found in my various plantations of strawberries, but no serious injury has yet been noticed.

However, I doubt if they are there for any good, and would advise making it as unpleasant for them as possible. Keep them from driving away over them with a flattened lime.

The ant is not a plant eating insect; it feeds mostly on honeydew and substances of that nature.

**ORCHARD FRUITS.**—At a recent meeting of the Alton Horticultural Society it was learned that there is an outlook for a fair crop of apples.

Trees are not overladen and fruit is unusually smooth and free from insect injuries. It seems to be the general complaint that fruit is unevenly distributed on the trees. Often one side of a tree is well loaded, the other side having few, if any, apples.

Pears will be a full crop from all indications. A good many orchards need thinning.

Pums will not amount to much this season, not excepting the Damsons, as the crop is light and many are small. All things considered the Damsons are perhaps the most profitable plum to grow, though there are a few of the Japanese that are profitable if properly grown, and some years the Wild Goose brings a fair price.

Cherries are very scarce and much in demand. Even the old reliable Early Richmond almost failed this year. Young trees of Montmorency and English Morello are bearing a good crop of choice fruit.

There will not be an overabundance of quinces.

**VEGETABLE NOTES.**—Earlana is with me decidedly the most profitable early tomato now ripening. All pole or running beans need assistance in getting started up the support, especially if poles are used. In doing this care should be taken to turn the vine to the right, so that it will not grow in a circle, but in a way; if you start to wind them to the left they will unwind and go right.

A GOOD COMBINATION.—Tomatoes need more room than is usually given them. A good many varieties should be planted 6 by 8 feet. Few growers venture to give them all this space, and the waste of ground. This year, I set out tomatoes the distance stated above, and put pot-grown cucumbers between them. I am now beginning to gather for market. They will bring good prices for a short time, or until the tomatoes come into bearing well. By that time the cucumbers will have paid for the whole season's cultivation of both cucumbers and tomatoes, and perhaps more.

They will then be taken out and the tomatoes given the space, which by that time they will need.

A GOOD BEAN.—The Kentucky Wonder, also called Old Homestead bean, is indispensable to all who know it. It is a pole bean of excellent quality that bears continuously the whole season through. Plenty of rain; crops growing finely; farmers looking forward to a very satisfactory season.

EDWIN H. RIEHL.  
North Alton, Ill., June 16, 1902.

**THE SUMMER MEETING OF THE MISSOURI STATE HORTICULTURAL SOCIETY.**

Editor RURAL WORLD: The summer meeting of the Missouri State Horticultural Society drew a large attendance at its very interesting and profitable sessions held at Eldon on June 10, 11 and 12. Delegates to the meeting were met at the station by a reception committee, were escorted to the Methodist church, where the meetings were held. The exercises opened with good music by the Eldon Woodman Band and vocal selections by a chorus choir. The Rev. J. Vetter offered

an opening prayer, and Mayor Henry Phillips made a welcoming address. It was a meeting with cordial sentiments, showing the warm hospitality of the good people of Eldon. An appropriate response was made by G. T. Tiffin, vice-president of the society. Mr. D. A. Robnett of Columbia, who was elected president of the society last fall, presided at the meeting. Mr. N. F. Murray of Oregon, the retiring president, made an appropriate farewell address. Professor C. E. Dutcher of Warrensburg read the first paper, which proved to be a very instructive treatment of the subject, "Means of Education for the Fruit Grower." His paper was well received, and it was followed by a paper on "Horticultural Societies," which was read by Miss Emma Park of Springfield. Miss Park gave an interesting description of the working of her home society. Most of the time at all of the meetings was given to the consideration and discussion of the best methods of growing small fruits. As the season has passed on, a number of small fruits the day was not so very large, still there were some fine specimens of the later berries, and very lovely attractions in the decoration of potted plants and flowers. There was also a very interesting collection of the various small fruits, which were in cold storage last November and were taken out in a well-preserved condition at the time of the meeting. Special prizes for these apples were awarded to D. A. Robnett of Columbia and W. G. Gano of Parkville. There were a score of other premiums given on smaller fruits and berries.

At the business sessions the reports of the secretary and treasurer show that the society was in a sound, prosperous condition. It was voted to give all the assistance possible to help the state society make a success of its fair the coming season and also to make extra exertions along the line of fruit making a large display of Missouri fruit at the World's Fair to be held at St. Louis. At the suggestion of T. V. Wilson of Hannibal, representing the Mississippi Valley Apple Growers' Association, the matter of having a national congress of apple growers and apple dealers was considered and the president was authorized to appoint a committee to work with a similar committee of other societies for the purpose of accomplishing the end in view.

H. Von Schrenk of the Shaw School of Botany of St. Louis, made a timely report on the progress of the Missouri Botanical Garden of St. Louis, greatly entertaining the audience at an evening session with an illustrated lecture, "Beautiful Shrubs and Herbaceous Plants."

Prof. F. B. Mumford of Columbia gave a very interesting discourse on "An Agricultural Exploration in Switzerland." It was a most timely and instructive address, and it was heard with much interest.

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with a few rods or half-acre, as an experiment. Now it is not doubted, but it may be, a certainty that we have over 20,000 acres of strawberries west of the eastern boundary of Illinois to the line north and south, southeast of Topeka, Kansas and reaching south into Arkansas seventy-five miles. Have we not expanded over enough acre, to know that the prices the past two years have been in accordance with the outlay and labor bestowed on the soil?

Let us consider this matter of organizing for the purpose of reducing the area of our planting to a figure so that we will not plant in darkness not knowing what the market will pay for our products. All manufacturers know the cost of their goods, and they make prices high enough to insure them against loss. Occasionally they do overreach the mark, when there is a slackness in the demand for their goods. But their profits in good times carry them over the times of calamity.

So every commercial berry grower should know the cost of his berries, in growing and preparing his fruits, in readiness for shipping. In the past few years we have been blindly expanding, trusting to luck, in the marketing of our goods.

The older experienced strawberry growers in southern Illinois have been reducing the area of their plantings, several of them diversifying their crops, and what is needed to keep them abundantly supplied with plant food with the slightest outlay of capital, the field of market gardening is a very inviting one.

The agricultural colleges of our land are seeking to give practical instruction in the cultivation of the strawberry, and the facilities for teaching this subject are being constantly increased. It is coming to be recognized more and more that the berry planter should be a practical grower and what is needed to keep them abundantly supplied with plant food with the slightest outlay of capital, the field of market gardening is a very inviting one.

**ELEMENTS ESSENTIAL TO SUCCESSFUL MARKET GARDENING.**

Editor RURAL WORLD.—Of the several elements that enter into the successful practice of market gardening, the first and foremost is that of the gardener himself. The person who is engaged in this business will, all other things being equal, generally outstrip the man who is in the business simply because his father was. The man, then, is one of the greatest elements that go to make the practice of market gardening a successful one.

First of all the man must be in love with his business. In addition to this he must know how to grow a good crop, and, having grown it, how to dispose of the same to good advantage. Besides all this he should be a man of good business qualifications. In other words, in love with business, a good grower, salesman, and business man. These are the essential elements that go to make the practice of market gardening a successful one.

**SELECTION OF SITE.**—Next to the man the selection of a suitable location for market gardening is of prime importance. In selecting a site one should take into consideration the following factors:

(1) Nearness to market or shipping point.  
(2) A soil suitable to the growth of the crop or crops to be grown.  
(3) The lay of the land.

The first, or nearness to market, must be governed to some extent by the following factors. If a suitable land with a favorable exposure can be secured, or a good market or shipping point, the prospects for success are much greater than where the produce has to be hauled a considerable distance. Too often one is obliged to be governed by the amount of cash at his disposal. It is not usually good business policy, however, to sacrifice nearness to market for the sake of a few extra acres of land, which in the long run is more than consumed in loss of time, and wear and tear on horses and vehicles.

In selecting land for market gardening it is essential that we secure one adapted to the crops we wish to grow. For example, if we wish to grow melons, it would be folly to select anything but a sandy soil. If we wish to grow onions we know that better results will be obtained if we select a black muck or swamp soil. If general gardening is to be practiced, a variety of soils would be desirable.

With regard to the lay of the land or the exposure of the land, a south or southeast exposure is considered the most desirable for the production of early vegetables, provided such soil is rather light and sandy, the exposure is unobstructed, and the opposite condition might serve equally well in the production of some late crop.

Other factors, such as the artificial ones of greenhouses and hotbeds for securing earliness of crops, might be mentioned. Although these artificial aids are valuable, the best advice to market gardeners, the contents are largely dependent on the man, and so will not be discussed in this paper.

**MARKETING GARDEN PRODUCE.**—The marketing of a crop of vegetables is just as important to successful gardening as is its production. Many a failure has occurred through the inability of the grower to properly dispose of his crop. Failure to successfully dispose of a crop may be due to various causes. Perhaps one of the commonest causes of failure is due to carelessness in preparing the product for market. A lack of uniformity in size or ripeness, as, for example, with the tomato or melon. Then again it frequently happens that the market becomes glutted at one point when, perhaps, at another equally as convenient to reach, the conditions may be exactly the reverse. It is at this point that the resourcefulness of the man comes into play. One grower would not think of looking elsewhere for a market, while the other would find the unglutted market and a ready sale for his product.

In the larger watermelon growing districts of the south, where large shipments are made daily to northern markets, it frequently happens when the watermelons are received, that shipments in transit are diverted by means of the telegraph to other markets.

The ability of the grower to maintain a steady supply of fresh vegetables during the growing season adds very materially in securing better markets and better prices for his products. This is especially true where he has a home market to supply.

**TRANSPORTATION FACILITIES.**—Unless one is growing vegetables for the home market, this question is a very important one. Some reference has been made to it in the selection of a site, but its importance can hardly be too greatly emphasized.

As a rule most sections of Indiana are well supplied with railroads, but undoubtedly some sections possess greater advantages than others. Hence in engaging in market gardening one should consider transportation facilities quite as carefully as any of the other factors.

**MAINTENANCE OF SOIL FERTILITY.**—In market gardening as in all other branches of agriculture, the proper maintenance of the fertility of the soil is highly essential. To this end it is necessary that one have a good general knowledge of the use of either natural or artificial manures, of the proper rotation of crops, and of the benefits to be derived from an occasional green manuring to put the soil in good tilth. It is also important for the grower to know the value of the soil in the plant economy and of the best means of conserving it.

Briefly considered, then, we have the man himself, the most important factor, with a number of other elements clustered around this central point. Upon the man rests the responsibility of the selection of a suitable site, the growing, preparation, and marketing of the crops, with the hundred and one details that enter into the successful practice of market gardening. The grower must be largely measured by his ability to master the details connected with his business.

The field for market gardening in Indiana is a large one, and is as yet but partially occupied. To the man who is equipped with a good general knowledge of plants and their requirements, of soils and what is needed to keep them abundantly supplied with plant food with the slightest outlay of capital, the field of market gardening is a very inviting one.

Prof. John Craig of Cornell University, in a recent communication to the "Rural New Yorker" said: "A remark in the paper of Mr. Garfield, of Michigan, presented at the meeting of the American Horticultural Society, while not new, is worthy of serious consideration. His remark in the form of a query was: 'Are we encouraging the consumption of fruit by growing and selling in quantity? Ben Davis's apples and Kieffer pears?' It is not a short-sighted policy to continue to grow a crop of fruit for the market, but to encourage the consumption of fruit by growing and selling in quantity. The exclusion of others which, though probably less productive, are much finer in quality? It has been conceded on all sides that the introduction of the Japanese plum has proved a great boon to fruit consumers in America. While the fruit is not as good as the native plum, it is more productive, yet in a fruit-raising expedition in which I was engaged a day or two ago, I could not help thinking after testing many of these Japanese plums, that after all, when one wanted something really delicious and something which would stimulate the appetite rather than take into consideration the variety of the Domestic type, such as Cox, Washington or Green Gage, a Chabot or a Burbank did not arouse a keen desire for more of the same kind, but the case was different with Reine Claude and Jefferson.

It has frequently been stated that if the Japanese type did not prove itself to be exactly what was wanted, it had in it the qualities which would make it valuable in crossing with our native species. This may be so, but we have little so far as I have seen to strengthen the case for this assertion. In the many hybrids which have already been produced.

**HONESTY THE BEST POLICY.**

P. M. Kieley of St. Louis deserves the thanks of the fruit and produce trade for the publication of the "Southern Fruit and Vegetable Shippers' Guide and Manual," inasmuch as it contains many facts of value to all concerned. In regard to the packing of fruits Mr. Kieley says: "Growers and shippers of fruit cannot afford to be dishonest. It is to see it opened, how it injures the sale and depreciates the value of their goods to find inferior fruit mixed in and covered up in good fruit. Put in no inferior fruit of any kind. We know it is difficult to watch pickers when a great quantity of fruit is being packed, and the honest hands, but the successful grower will take timely steps whatever his hurry to guard against such a serious mistake. Topping off, putting on top all the good fruit in the box is also a mistake, and its injustice must be apparent to the honest grower. Let the honest grower pack his fruit in the honest way, and the contents are largely dependent on the man, and so will not be discussed in this paper.

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# The Apiary

## FIVE MILLION BEES.

One of the liveliest and most novel exhibits at the Louisiana Purchase Exposition will come from Colorado, says Mr. Van E. Rome, a Colorado Springs mine owner, now on a visit to St. Louis as World's Fair Commissioner. He says that, while the immense wealth of that state is chiefly hidden underground, it is also an important factor in horticulture and agriculture. As the Fair management desire to have live exhibit, the Mayor of Rocky Ford, Mr. Swink, who is also an apiarist, has decided to bring his bees to the World's Fair, and they will work here during the Fair term. Mr. Swink will do this entirely at his own cost, fully \$10,000. He proposes to bring 600 hives, over five million bees, which will be set to construct a miniature counterpart of the Colorado State House, where the bees will be kept. The bees will be turned out to find the honey-making material in the country surrounding the World's Fair grounds. It will be a great exhibit. The Colorado World's Fair Commission, with a public spirit which does them infinite credit, have declined to draw upon the State appropriation for their services, preferring that the money be used in making the State exhibit.

Contrary to the general opinion, two queens, mother and daughter, may sometimes, if not often, be found working harmoniously in one hive, especially in the large ten or twelve frame hives, says the American Cultivator. The Italian queen very frequently has a younger one assisting her in filling the brood combs when she has reached her second or third year. She seems to feel that her days of usefulness are nearly over and that she must leave a successor. Of course, if the hive is small and the honey flow good she may leave with a swarm, but we think the two may more often be found together in the fall, when the old queen begins to realize that she may not survive the winter or that she cannot lay eggs enough to make a strong winter colony. This should be borne in mind when one thinks it advisable to destroy an old queen and substitute a young one. First make sure that there is already a young one in the hive, which may be suspected if there is an unusual amount of brood in the combs. Though some queens are useful when four or five years old, many die of old age about the end of the second year.

We doubt if the Italian queens are as long lived as the black queens. The black workers are said to live longer in the spring than the Italians, perhaps because they are not in such haste to get out to work before the weather gets warm and pleasant. The age to which workers live has been very closely determined by introducing a fertilized queen into a colony of black bees. The queen was laying when the change is made, there will be a black brood hatched and ready to go to gathering nectar in twenty-four to twenty-eight days after. Opinions differ as to the exact date, perhaps because they mature faster in warm weather than in cold. The queen, for some other reason, but in about forty-five to forty-nine days after that the change is made in the spring. If made in September, many may be found the next May, but they do not last long.

**POINTS ON THE INTRODUCTION OF QUEENS.**

From my experience in introducing queens by using bees from the colonies to which they are introduced, I consider the plan for the introduction of queens to be the best. The usual instructions that accompany shipper cages, says Bee Gleanings. In fact, I have not attempted to introduce one in a year with the cage in which she is received without first releasing the escort and caging some of the bees of the colony with her, which invariably takes the queen kindly and she lays two or three eggs. If the queen is not so filled themselves with honey. It also works equally well if the queen be caged in an odorless cage without any bees, or the odorless cage without the bees, first scented by allowing the queen to go in the cage for an hour, in the hive; but I prefer scenting the cage with the old queen and then using the bees with the queen to be introduced, either by placing her in it and selecting the bees one at a time or allowing them to go in, which they quickly do in search of their mother, and close them for awhile, and then allow the queen to run in.

One advantage worth considering in having bees with the queen is that she is less liable to be damaged by the outside bees by getting hold of a leg or wing. I am partial to slide-comb cages, but the plan is to place the queen in the cluster; but instead of relying on hatched brood, young bees are at once put into the cage with the queen through a hole near one corner as large as a lead pencil. The hole is stopped a day or two with a cork, and with candy when the cork is removed, the bees are allowed to release the queen and combining the good points in the different methods. A great deal of this is too complicated for a novice, and no doubt for that class the usual instructions are best; but before being too confident of uniform success by pasturing it should be remembered that, when queens are sent by mail, bees, cage and all partake of the scent of the mails, and from this source much of the trouble arises, and there will not be the success that attends the same plan if the queen is changed to a fresh cage, thus removing the scent of the old cage. Bees will often destroy their own queen if given back after having been caged an hour or two with some of her own bees in a cage that has an odor that is transmitted to the queen.

**BEE ECONOMY.**

It is as certain as anything can be that at one time the bee was simply male and female. The irresponsible male buzzed about getting his living, marrying and dying. The responsible female not only got her own living, but that of her children, writes Harvey Sutherland in *Albee*. Somehow, they came to see the advantage of communal effort, and, just as women say now: "If you'll wash the dishes, I'll wipe 'em," one female bee said to the other: "I'll be the mother if you'll get the living." It was a bargain, and they took the drones to board. Somebody had to look out for them. The queen of a beehive does not rule; she lays eggs. She does not mind the babies. She does not even do her own digesting, let alone getting the food. The attend-



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